

B. Instrumento copulativo e duobus pedum paribus formato.

1. Numero segmentorum magno varioque. Foraminibus repugnatoriis manifestis.
 - (a) Mandibulis haud imminutis *Iulidæ.*
 - (b) Mandibulis imminutis *Polyzonidæ.*
2. Numero segmentorum semper triginta. Foraminibus repugnatoriis evanidis *Chordeumidæ.*

XXXVI.—*Descriptions of new or little-known South-American Frogs of the Genera Paludicola and Hyla.* By G. A. BOULENGER.

Paludicola nebulosa.

Liuperus nebulosus, Burmeister, Reise La Plata, ii. p. 532 (1861).

Tongue subcircular, indistinctly nicked behind. Vomerine teeth none. Snout extremely short, much shorter than the diameter of the eye, somewhat similar to that of *Notaden Bennettii*; nostrils directed forwards; eye large; interorbital space about two thirds the width of the upper eyelid; tympanum distinct, circular, measuring half the diameter of the eye. Fingers short, depressed, first much longer than second; toes short, much depressed, webbed at the base, the web extending as a fringe to their tips; subarticular tubercles small, of toes conical; two very strong, compressed, sharp-edged metatarsal tubercles, inner largest; no tarsal tubercle; no tarsal fold. The hind limb being carried forwards along the body, the tibio-tarsal articulation reaches the axilla; tibia little longer than the skull. Skin smooth; no lumbar gland. Pale brownish above, with small scattered blackish spots; no cross bars on the limbs. From snout to vent 40 millim.

Mendoza.

Described from the type specimen (♀) in the Berlin Museum (no. 7374).

Paludicola albifrons (Spix).

Tongue small, elliptic, entire. Vomerine teeth none. Snout rounded, as long as the orbital diameter; nostril nearer the tip of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum hidden. Fingers moderate, first not extending quite as far as second; toes moderate, free, not fringed; subarticular tubercles moderate,

conical; a small conical tubercle on the inner side of the tarsus; two large, oval, compressed metatarsal tubercles, nearer each other than the tarsal tubercle. The tibio-tarsal articulation reaches the posterior corner of the eye. Skin nearly smooth, with flat warts above; no lumbar gland. Greyish above, with numerous, insuliform, dark-edged spots; dark vertical bars on the upper lip and cross bars on the limbs; sides of throat black in the male. Two external subgular vocal sacs in the male. From snout to vent 30 millim.

Brazil.

Described from two specimens (male and young) from Porto Alegre in the Berlin Museum (no. 6800).

The larger metatarsal tubercles distinguish *P. albifrons* from *P. gracilis*.

Liuperus marmoratus, Burmeister ('La Plata,' ii. p. 532), is not identical with *P. albifrons*, as stated by Peters, but with *P. fuscomaculata*.

Paludicola Henselii, Peters.

Tongue elliptic, entire. Vomerine teeth none. Snout subacuminate, as long as the orbital diameter; interorbital space broader than the upper eyelid; tympanum small, very indistinct. Fingers moderate, first not extending quite as far as second; toes moderate, free, not fringed; subarticular tubercles moderate, not conical; a small tarsal tubercle; two small, oval, metatarsal tubercles, which are wider apart from each other than the inner from the tarsal tubercle. The tibio-tarsal articulation reaches the posterior corner of the eye. Back with numerous, nearly straight, longitudinal folds; no lumbar gland. Grey-brown above, lighter along the middle and the sides of the back; hind limbs with dark cross bands; a black band extends from the end of the snout, through the eye, to the side, obliquely descending and gradually widening from behind the eye; below this black band, from the end of the snout to the shoulder, a whitish streak, which is again edged below by a blackish streak bordering the lip; lower surfaces whitish, mottled with brown. Male with a large subgular vocal sac. From snout to vent 19 millim.

Rio Grande, Brazil.

Described from the type specimen (♂) in the Berlin Museum (no. 6806).

Paludicola Bischoffi, sp. n.

Tongue elliptic, entire. Vomerine teeth none. Snout

subacuminate, as long as the orbital diameter; interorbital space as broad as the upper eyelid; tympanum small, very indistinct. Fingers slender, first considerably shorter than second; toes slender, fringed, with a slight rudiment of web; subarticular tubercles moderate, not conical; a small tarsal tubercle; two small, oval, metatarsal tubercles, which are wider apart from each other than the inner from the tarsal tubercle. The tibio-tarsal articulation reaches the anterior corner of the eye. Skin smooth, with a few very fine oblique or sinuous folds above; no lumbar gland. Pale olive above, with darker insuliform spots on the back and cross bars on the hind limbs; a black band, edged above with a fine whitish line, extends from the end of the snout, through the nostril, the eye, and the ear, to the side, obliquely descending and gradually widening from behind the eye; lower surfaces whitish, mottled with brown round the jaw and on the throat and breast. From snout to vent 29 millim.

Mundo Novo, Rio Grande do Sul.

A single female specimen, obtained by Hr. Th. Bischoff.

Paludicola Olfersii.

Phryniscus Olfersii, Martens, Nom. Mus. Berol. p. 40.

Nattereria lateristriga, Steind. Verh. zool.-bot. Ges. Wien, 1864, p. 279, pl. xiv. fig. 2.

Paludicola Olfersii, Peters, SB. Ges. nat. Freunde, 1882, p. 62.

Tongue elliptic, entire. Vomerine teeth none. Snout subacuminate, nearly as long as the orbital diameter; interorbital space as broad as the upper eyelid; tympanum hidden. Fingers slender, first not extending as far as second; toes slender, free, not fringed; two small metatarsal tubercles, inner oval, outer round; no tarsal tubercle; no tarsal fold. The tibio-tarsal articulation reaches the anterior corner of the eye. Skin smooth, without folds; no lumbar gland. Pale brown above, with darker symmetrical markings and cross bands on the hind limbs; a light streak along the coccyx; a blackish band from the end of the snout to the groin, passing through the eye, gradually widening and obliquely descending from behind the eye; the band is sharply defined and finely white-edged above and between the eye and the shoulder; lower surfaces whitish, throat and breast mottled with brown. From snout to vent 28 millim.

Brazil.

A half-grown female specimen, one of the types, presented to the author by Professor Peters in 1882, is in the British Museum.

Liuperus elegans, Peters, of which I examined the type in the Berlin Museum, belongs to the genus *Hylodes*, and is very closely allied to *H. bogotensis*, Peters, from which it differs in the smaller digital expansions. The vomerine teeth, very indistinct, appear to be in two small rounded groups behind the line of the choanæ. *Liuperus nitidus*, Peters, is probably likewise not a *Paludicola*; but I could not examine the sternum.

Hyla marginata, sp. n.

Tongue broader than long, entire, posterior fourth free. Vomerine teeth in two transverse oval groups, close together, on a line with the posterior border of the choanæ, which are of moderate size and much larger than the eustachian tubes. Head moderate, broader than long; snout rounded, shorter than the diameter of the orbit; canthus rostralis angular; loreal region not very oblique, concave; nostril nearer the end of the snout than the eye; interorbital space broader than the upper eyelid; tympanum distinct, half the diameter of the eye. Fingers one-third webbed; a distinct rudiment of pollex; toes about three-fifths webbed; disks a little smaller than the tympanum; subarticular tubercles moderate; no tarsal fold. The tibio-tarsal articulation reaches halfway between the eye and the end of the snout. Skin smooth; belly with large granules; throat indistinctly granulate. Upper surface of head and tibia and back finely powdered with brown on a colourless ground; a few small dark brown spots on the head and back, one on each upper eyelid; a dark brown line from the end of the snout, along the canthus rostralis and supraciliary edge, above the tympanum, and along each side of the body as far as the sacral region, also along the outer side of the forearm and tibia; a transverse dark brown streak, edged above with white, above the vent and at the heel; a white line round the upper lip; lower surfaces colourless. From snout to vent 50 millim.

Mundo Novo, Rio Grande do Sul.

A single female specimen, collected by Hr. Bischoff.

Apparently related to *H. rubicundula*, R. & L.

Hyla Bischoffi, sp. n.

Tongue circular, entire, and slightly free behind. Vomerine teeth in a strong, scarcely interrupted, transverse series, on a line with the hinder edge of the choanæ, which are of moderate size and larger than the eustachian tubes. Head rather large, rather strongly depressed, slightly broader than

long; snout rounded, as long as the diameter of the orbit; canthus rostralis angular; loreal region very oblique, concave; nostril nearer the end of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum very distinct, half the diameter of the eye. Fingers one-fourth webbed; a distinct rudiment of pollex; toes half-webbed; disks smaller than the tympanum; subarticular tubercles moderate; a very slight fold along the inner edge of the tarsus. The tibio-tarsal articulation reaches halfway between the eye and the end of the snout. Skin smooth above; belly and lower surface of thighs with large, throat with smaller, granules. Greyish or pale brown above, with or without large brown spots and a brown line along the middle of the head and anterior half of body; a dark brown band from the end of the snout to above the shoulder, passing through the nostril and the eye and over the tympanum; a dark brown line borders the upper and the lower lip; a dark brown streak along the outer side of the tibia; hinder side of thighs light, with vertical black bars; lower surfaces white. From snout to vent 55 millim.

Mundo Novo, Rio Grande do Sul.

Two female specimens, collected by Hr. Bischoff.

Allied to *H. pulchella*, D. & B., but well distinguished by the larger head with much more oblique lores.

Hyla zebra, D. & B.

Tongue circular, indistinctly nicked, posterior fourth free. Vomerine teeth in two small groups in the middle between the choanæ; latter moderate, a little larger than the eustachian tubes. Head moderately large, a little broader than long; snout rounded, nearly as long as the diameter of the orbit; canthus rostralis obtuse; loreal region nearly vertical; nostril nearer the end of the snout than the eye; interorbital space as broad as the upper eyelid; tympanum very distinct, half the diameter of the eye. Fingers one-third webbed; a distinct rudiment of pollex; toes two thirds webbed; disks a little smaller than the tympanum; subarticular tubercles moderate; a strong fold along the inner edge of the tarsus. The tibio-tarsal articulation reaches halfway between the eye and the end of the snout. Upper surfaces glandular, the glandules most distinct on the head and limbs, but present also on the back; belly and lower surface of thighs with large, throat with smaller granules. Brown above, with large blackish spots on the sides and blackish bars across the front and posterior sides of the thighs, alternating with lighter

bands; belly white, throat brown. From snout to vent 63 millim.

Buenos Ayres.

Described from one of the type specimens (♀) in the Paris Museum, kindly communicated by Prof. Vaillant.

XXXVII.—*Notes from the St. Andrews Marine Laboratory (under the Fishery Board for Scotland).*—No. VIII. By Prof. M'INTOSH, M.D., LL.D., F.R.S., &c.

1. On a Post-larval *Labrus*, with Remarks on the Colour of Pelvic Fins.
2. On the Post-larval Condition of *Liparis Montagu*.
3. On a peculiar Teleostean Yolk-sac.
4. General Remarks on Post-larval Food-Fishes.

1. *On a Post-larval Labrus, with Remarks on the Colour of Pelvic Fins.*

While lately (middle of September) using the large mid-water net, which has proved so valuable in regard to the life-histories of marine forms, a young wrasse, about 11 millim. in length, was captured, which, from the length of the anal fin and other characters approaches *Labrus mixtus*, but appears to be only a post-larval example of *Labrus maculatus*, though further examination is necessary on this point.

This young wrasse shows boldly marked white touches on a greenish ground variegated with brown pigment. The general hue, indeed, is greenish brown with various bands and patches. Thus the head has two white touches (each somewhat crescentic in form) over the brain, and a transverse one in front of the dorsal fin. A brown band passes from the middle of the eye forward on the snout and in line with the brown bar on the tip of the mandible. Another brown bar extends from the eye downward and forward, a third touch occurs on the hyoid, and two or three bars exist elsewhere on the head. The eyes are pale greenish with golden arches superiorly, and a band of brownish red surrounds the pupil, except inferiorly, where it is almost absent. This reddish belt has a process anteriorly and posteriorly.

The body is conspicuously marked with eight white spots, the first being near the pectorals, the last in the centre of the base of the tail. These spots are situated above the lateral line. Five opaque white spots again occur above the former, two sending prolongations to the tip of the dorsal fin, and a